

UNDERGRADUATE AND PROFESSIONAL MAJOR CHANGE BULLETIN NO. 5
Fall 2021

--REQUIREMENTS--

The requirements listed below reflect the undergraduate major curricular changes approved by the Catalog Subcommittee since approval of the last Undergraduate Major Change Bulletin. All changes are underlined. Deletions are crossed out. The column to the far right indicates the date each change becomes effective. Note: Items marked {S} have been streamlined and do not require Catalog Subcommittee review.

Department	Proposed	Effective Date
<p>{S} Business Revise requirements for minor in Entrepreneurship</p>	<p>Entrepreneurship</p> <p>Please see the Carson College of Business section of this Catalog for additional instructions. To be admitted into the Entrepreneurship minor, students must meet the following minimum requirements:</p> <ol style="list-style-type: none"> 1. Complete 27 credits. 2. WSU cumulative GPA of at least 2.50 and not on academic probation <p>The entrepreneurship minor requires 18 credits of coursework including:</p> <p>ACCTG <u>220 or 230</u> ENTRP 426 One management course: ENTRP 489, ENGR 401, or an approved substitute One marketing/communication course: ENTRP 490, COMSTRAT 380, or an approved substitute Two semesters of business plan courses (minimum 6 credits):</p> <ul style="list-style-type: none"> ▪ ENTRP 485 and 486 ▪ ENTRP 496 and 496 (Special Topics) ▪ BIO ENG 410 and 411 ▪ or approved substitutes <p>Students must maintain and overall GPA of 2.50 in the entrepreneurship minor courses A minimum of 9 credits of upper-division coursework must be taken in residence at WSU or through WSU-approved education abroad or educational exchange courses.</p> <p>To be admitted into this minor, students must meet with a business advisor and declare their interest. Students must ensure that they meet all course prerequisites before enrolling in any College of Business courses.</p>	<p align="center">8-22</p>
<p>{S} Business Revise requirements for minor in Hospitality Business Management</p>	<p>Hospitality Business Management</p> <p>Please see the Carson College of Business section of this Catalog for additional instructions. To be admitted into the Hospitality Business Management (HBM) minor, students must meet the following minimum requirements:</p> <ol style="list-style-type: none"> 1. Complete 27 credits 	<p align="center">8-22</p>

	<p>2. WSU cumulative GPA of at least 2.50 and not on academic probation</p> <p>The minor in hospitality business management requires a minimum of 19 credits of coursework, including:</p> <p>ACCTG <u>220 or 230</u> HBM 101 or 401 9 credits of upper-division HBM courses (excluding 498 and 499 courses) 6 credits of College of Business courses at any level</p> <p>Students must maintain an overall GPA of at least 2.50 in courses required for the HBM major.</p> <p>A minimum of 9 credits of upper-division coursework must be taken in residence at WSU or through WSU-approved education abroad or educational exchange courses.</p> <p>Up to 6 credits may be transferred from another institution.</p> <p>To be admitted into this minor, students must meet with a business advisor and declare their interest. Students must ensure that they meet all course prerequisites before enrolling in any College of Business courses.</p> <p>In addition, students must complete 400 hours of internship/industry experience to earn the minor. In order for hours to count for the requirement, they must meet the following criteria:</p> <ol style="list-style-type: none"> 1. Hours must be worked after high-school graduation; 2. All hours must be documented as paid; 3. Hours must be worked at a company whose primary source of revenue is derived from hospitality services; and 4. The employer evaluation for the hours must reflect an average of 80% across the ratings criteria on the form. 	
<p>{S} Business Revise requirements for minor in Senior Living Management</p>	<p>Senior Living Management</p> <p>Please see the Carson College of Business section of this Catalog for additional instructions. To be admitted into the Senior Living Management (SLM) minor, students must meet the following minimum requirements:</p> <p>Complete 27 credits. WSU cumulative GPA of at least 2.50 and not on academic probation.</p> <p>The minor in senior living management requires a minimum of 19 credits of coursework including:</p> <p>ACCTG <u>220 or 230</u> HBM 101 or 401 HBM 375 H D 308, 350, 360, or 405, or PSYCH 363 HBM 494 HBM 470</p> <p>Any CCB course – 3 credits (HBM 280 or MKTG 360 or MGMT 450 are recommended)</p>	<p>8-22</p>

	<p>Students must maintain an overall GPA of at least 2.50 in SLM minor courses.</p> <p>A minimum of 9 credits of upper-division coursework must be taken in residence at WSU or through WSU-approved education abroad or educational exchange courses.</p> <p>Up to 6 credits may be transferred from another institution.</p> <p>To be admitted into this minor, students must meet with a business advisor and declare their interest. Students must ensure that they meet all course prerequisites before enrolling in any College of Business courses.</p> <p>In addition, students must complete 400 hours of internship/industry experience to earn the minor. In order for hours to count for the requirement, they must meet the following criteria:</p> <ul style="list-style-type: none"> Hours must be worked after high-school graduation; All hours must be documented as paid; Hours must be worked at a company whose primary source of revenue is derived from hospitality services; and The employer evaluation for the hours must reflect an average of 80% across the ratings criteria on the form. 	
<p>{S} Business Revise requirements for minor in Wine and Beverage Business Management</p>	<p>Wine and Beverage Business Management</p> <p>Please see the Carson College of Business section of this Catalog for additional instructions. To be admitted into the Wine and Beverage Business Management (WBBM) minor, students must meet the following minimum requirements:</p> <ul style="list-style-type: none"> Complete 27 credits. WSU cumulative GPA of at least 2.50 and not on academic probation <p>The minor in wine and business management requires a minimum of 19 credits of coursework including:</p> <ul style="list-style-type: none"> ACCTG <u>220</u> or 230 B A 212; or B A 204, 205, and 206 HBM 231, 350, 358, and 490 MKTG 360 <p>Students must maintain an overall GPA of at least 2.50 in WBBM minor courses.</p> <p>A minimum of 9 credits of upper-division coursework must be taken in residence at WSU or through WSU-approved education abroad or educational exchange courses.</p> <p>Up to 6 hours may be transferred from another institution.</p> <p>To be admitted into this minor, students must meet with a business advisor and declare their interest. Students must ensure that they meet all course prerequisites before enrolling in any College of Business courses.</p> <p>In addition, students must complete 400 hours of internship/industry experience to earn the minor. In order for hours to count for the requirement, they must meet the following criteria:</p> <ul style="list-style-type: none"> Hours must be worked after high-school graduation; All hours must be documented as paid; 	<p>8-22</p>

	<p>Hours must be worked at a company whose primary source of revenue is derived from hospitality services; and The employer evaluation for the hours must reflect an average of 80% across the ratings criteria on the form.</p>																							
<p>Electrical Engineering and Computer Science Revise graduation requirements for Bachelor of Science in Electrical Engineering</p>	<p>Electrical Engineering (124 Credits)</p> <p>Students are admitted to the Electrical Engineering major upon demonstrating they are calculus-ready and making their intention known to the department. Calculus-ready is defined as having an ALEKS math placement score of 83% or higher; or completion of MATH 108, and 171 or a higher calculus course with a grade of C or better; or completing the Math AP with a score of 2 (places the student in MATH 171), or 3 (credit is given for MATH 171).</p> <p>To remain in good standing students must complete CPT S 121 or 131, MATH 171, 172, 220, 273, and PHYSICS 201/211, each with a grade of C or better, and earn a cumulative WSU GPA of 2.5 or higher upon completion of the above courses.</p> <p>Alternate Pathway: Completion of ALL standard pathway benchmarks and additionally: ENGLISH 101, CHEM 105, PHYSICS 202/212, E E 261, 262, MATH 315, all with a grade of C or better, and a 2.5 cumulative WSU GPA (or transfer GPA if no WSU GPA exists). Everett and Bremerton applicants follow the alternate pathway.</p> <p>No courses listed in this schedule of study may be taken on a pass/fail basis. With the exception of E E 488, E E 499, and ENGR 489, all listed E E and CPT S courses, required electives, and prerequisites to these courses must be completed with a grade of C or better. Students should also consult with an advisor regarding allowed course substitutions to the schedule of studies listed below.</p> <p>First Year</p> <table data-bbox="475 1388 1382 1885"> <thead> <tr> <th><i>First Term</i></th> <th><i>Credits</i></th> </tr> </thead> <tbody> <tr> <td>CHEM 105 [PSCI]</td> <td>4</td> </tr> <tr> <td>ENGLISH 101 [WRTG]</td> <td>3</td> </tr> <tr> <td>ENGR 120</td> <td>2</td> </tr> <tr> <td>HISTORY 105 [ROOT]</td> <td>3</td> </tr> <tr> <td>MATH 171 [QUAN]</td> <td>4</td> </tr> <tr> <th><i>Second Term</i></th> <th><i>Credits</i></th> </tr> <tr> <td>CPT S 121 or 131</td> <td>4</td> </tr> <tr> <td>MATH 172</td> <td>4</td> </tr> <tr> <td>MATH 220</td> <td>2</td> </tr> <tr> <td>PHYSICS 201</td> <td>3</td> </tr> </tbody> </table>	<i>First Term</i>	<i>Credits</i>	CHEM 105 [PSCI]	4	ENGLISH 101 [WRTG]	3	ENGR 120	2	HISTORY 105 [ROOT]	3	MATH 171 [QUAN]	4	<i>Second Term</i>	<i>Credits</i>	CPT S 121 or 131	4	MATH 172	4	MATH 220	2	PHYSICS 201	3	<p>8-22</p>
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CHEM 105 [PSCI]	4																							
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HISTORY 105 [ROOT]	3																							
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CPT S 121 or 131	4																							
MATH 172	4																							
MATH 220	2																							
PHYSICS 201	3																							

PHYSICS 211	1
Second Year	
<i>First Term</i>	<i>Credits</i>
CPT S 122 or 132	4
E E 214	4
MATH 273	2
PHYSICS 202	3
PHYSICS 212	1
<i>Second Term</i>	<i>Credits</i>
Arts [ARTS]	3
E E 234	4
E E 261	3
E E 262	1
ECONS 101 [SSCI] or 102 [SSCI]	3
MATH 315	3
Complete Writing Portfolio	
Third Year	
<i>First Term</i>	<i>Credits</i>
E E 311	3
E E 321	3
E E 331	3
E E 352 [M]	3
Engineering Science Elective ¹	3
<i>Second Term</i>	<i>Credits</i>
E E 302	3
E E 341	3
E E 361	3
STAT 360	3
Track Elective ^{2,3}	3
Fourth Year	
<i>First Term</i>	<i>Credits</i>
Diversity [DIVR]	3
E E 415	3
Engineering Science Elective ¹	3
ENGLISH 402 [WRTG]	3
Track Electives ^{2,3}	6

	<p>Second Term</p> <p>300-400-level Track Electives^{2,3} 6</p> <p>Biological Sciences [BSCI] 3 or 4</p> <p>E E 416 [CAPS] [M] 3</p> <p>Humanities [HUM] 3</p> <p>Complete E E Exit Interview and Survey</p> <hr/> <p>Footnotes</p> <p>¹ Engineering Science Electives (6 credits): Choose from CE 211, ME 212, 301, MSE 302.</p> <p>² Track Electives: Students follow one of five tracks for an emphasis in their degree program. A total of 15 credits are required for each track. Any electives within a track must be chosen from the list of approved technical electives in footnote 3. Power Track: required: E E 362 [M], 491, at least 6 credits from E E 486, 489, 492, 493, 494, and remaining credits from list of approved technical electives; Microelectronics Track: required: E E 351, 476, 496, and at least two from E E 431, 434, 496, and one from E E 431, 434, 464, 466, 488, 489, 496, 499, ENGR 489 with a combined maximum of 3 credits total from E E 488 and ENGR 489 or E E 499 combined; Systems Track: required: E E 464, 489, at least one from E E 432, 451, and one from E E 351, 431, 432, 451, 470, and remaining credits from list of approved technical electives; General Track: at least one from E E 324 [M], 351, 362 [M], 489; at least three 400-level E E letter graded course not used to meet other program requirements, and one course remaining credits from the list of approved technical electives with a minimum of nine credits 400-level E E courses; or Computer Engineering Track: required: E E 434, 466, at least one from E E 324 [M], 334, 431, 476, CPT S 360, and remaining credits from list of approved technical electives and at least one 400-level E E letter graded course not used to meet other program requirements. with a minimum of three credits 400-level E E courses.</p> <p>³ Technical Electives approved for Power Track, Systems Track, General Track (minimum 9 credits 400-level E E courses), and Computer Engineering Track (minimum 3 credits 400-level E E courses) include: ASTRONOM 435, CE 463, CHEM 331, 333, 345, MATH 320 [M], 325, 340, 364, 401 [M], 402 [M], 415, 420, 421 [M], 440, 441, 448, 453, 464, 466, ME 304, 401, MSE 402, 403, PHYSICS 303, 304, 320, 443, 450, and 463, or any 300-400-level CPT S or E E course not used to fulfill other requirements.</p>							
<p>Neuroscience Under Bachelor of Science in Neuroscience, add Biomedical Business Option</p>	<p>Biomedical Business Option (120 Hours)</p> <p>Students may be admitted to the Neuroscience - Biomedical Business Option upon making their intention known to the department and enrollment in or credit for MATH 106 (or higher). To maintain admission to the major, students who have completed a minimum of 30 credits at WSU must maintain a 3.0 minimum GPA overall, and a 3.0 minimum GPA in BIOLOGY 107, CHEM 105, CHEM 106 or 116, MATH 140 or 171, NEUROSCI 301, NEUROSCI 302, PHYSICS 101/111 or 201/211 or 205, and PHYSICS 102/112 or 202/212 or 206 or CHEM 345. Students must receive a grade of C or better in these courses and may repeat a maximum of three of these courses to maintain admission to the major.</p> <p>First Year</p> <table data-bbox="475 1791 1385 1917"> <thead> <tr> <th><i>First Term</i></th> <th><i>Hours</i></th> </tr> </thead> <tbody> <tr> <td>CHEM 105 [PSCI]</td> <td>4</td> </tr> <tr> <td>ENGLISH 101 [WRTG]</td> <td>3</td> </tr> </tbody> </table>	<i>First Term</i>	<i>Hours</i>	CHEM 105 [PSCI]	4	ENGLISH 101 [WRTG]	3	<p>8-22</p>
<i>First Term</i>	<i>Hours</i>							
CHEM 105 [PSCI]	4							
ENGLISH 101 [WRTG]	3							

MATH 140 [QUAN] or 171 [QUAN]	4
NEUROSCI 105 [BSCI]	3
PSYCH 105 [SSCI]	3
Second Term	Hours
BIOLOGY 107	4
CHEM 106	4
Communication [COMM] or Written Communication [WRTG] ¹	3
HISTORY 105 [ROOT]	3
Second Year	
First Term	Hours
BIOLOGY 106	4
CHEM 345	4
NEUROSCI 301 ²	3
PHYSICS 101 or 201	3
PHYSICS 111 or 211	1
Second Term	Hours
Arts [ARTS]	3
Diversity [DIVR]	3
NEUROSCI 302	3
PHYSICS 102 or 202	3
PHYSICS 112 or 212	1
Neuroscience Elective ³	3
Complete Writing Portfolio	
Third Year	
First Term	Hours
BIOLOGY/MBIOS 301	4
Humanities [HUM]	3
Behavior Course ⁴	3
Statistics Course ⁵	3 or 4
Second Term	Hours
ENTRP 490	3
MBIOS 303	4
NEUROSCI 404	4
Biomedical Business Elective ⁶	3
Fourth Year	

	<p>First Term</p> <table border="0"> <tr> <td>ENTRP 426</td> <td style="text-align: right;">Hours</td> </tr> <tr> <td></td> <td style="text-align: right;">3</td> </tr> <tr> <td>ENTRP 485</td> <td style="text-align: right;">3</td> </tr> <tr> <td>NEUROSCI 430 [M]</td> <td style="text-align: right;">4</td> </tr> <tr> <td>Electives⁷</td> <td style="text-align: right;">6</td> </tr> </table> <p>Second Term</p> <table border="0"> <tr> <td>ENTRP 486</td> <td style="text-align: right;">Hours</td> </tr> <tr> <td></td> <td style="text-align: right;">3</td> </tr> <tr> <td>NEUROSCI 403 [M]</td> <td style="text-align: right;">3</td> </tr> <tr> <td>NEUROSCI 490 [CAPS]</td> <td style="text-align: right;">3</td> </tr> <tr> <td>Electives⁷</td> <td style="text-align: right;">6</td> </tr> </table> <hr/> <p>Footnotes</p> <p>¹ NEUROSCI/MBIOS 201 is recommended.</p> <p>² PSYCH 372 may be taken in place of NEUROSCI 301 with department permission.</p> <p>³ Neuroscience Electives (minimum 3 credits): Approved courses include BIOLOGY 307, 315, 321, 333, 340, 352, 353, 354, 438, 456; MATH 340; MBIOS 304, 305, 401, 404, 413; NEUROSCI 305, 333, 409, 425, 426; PHYSICS 466; PSYCH 265, 312, 333, 350, 361, 372, 384, 464, 470, 490, 491; VET PH 308. Other courses may be allowed by department consent. Courses may not be used to fulfill more than one requirement. Please see your advisor. Please see your advisor.</p> <p>⁴ Choose one course from: NEUROSCI 305, 333, or 409. Other courses may be allowed by department consent.</p> <p>⁵ Choose one course from: PSYCH 311, STAT 212, 360, 370, or 412.</p> <p>⁶ Biomedical Business Electives (minimum 3 credits): Approved courses include ENTRP 489, MGTOP 301, MGTOP 401, MGTOP 483. Other courses may be allowed by department consent. Please see your advisor.</p> <p>⁷ Elective choices should include 300-400 level coursework to meet the University minimum requirement of 40 upper-division credits.</p>	ENTRP 426	Hours		3	ENTRP 485	3	NEUROSCI 430 [M]	4	Electives ⁷	6	ENTRP 486	Hours		3	NEUROSCI 403 [M]	3	NEUROSCI 490 [CAPS]	3	Electives ⁷	6	
ENTRP 426	Hours																					
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<p>Neuroscience New undergraduate certificate: Business of Biomedicine</p>	<p>Certificate in the Business of Biomedicine</p> <p>The certificate in the Business of Biomedicine prepares students for careers in the dynamic, interdisciplinary world of biomedical business. To complete the certificate, students must complete a minimum of 16 credits consisting of two core courses and three additional electives with a GPA of 2.5 or better. Required core courses are BIOLOGY/MBIOS 301 and MGMT 301. Fulfillment of elective emphasis courses requires completion of one of ACCTG 220, ACCTG 230, FIN 223, or ENTRP 426; AND one of ENTRP 490, COMSTRAT 380, or COMSTRAT 395; AND one of NEUROSCI 302 or MBIOS 303 or another course as approved by your advisor.</p>	<p>8-22</p>																				
<p>Physics & Astronomy Revise graduation requirements for Bachelor</p>	<p>Applied Physics Option (120 Credits)</p>	<p>8-22</p>																				

of Science in Physics -
Applied Physics Option

The program of courses below is appropriate for students who wish to enter industry upon graduation. The program of courses below is appropriate for students who have had a good experience with calculus in high school and wish to start physics in the first semester at WSU (even though the student may be placed in MATH 171, if their high school grades for the year course were B or better they can follow this schedule of study). Students who have placed in MATH 172 can accelerate the math sequence. Students who have not had calculus in high school should defer PHYSICS 201/211 until they have completed MATH 171. Upon consultation with the departmental advisor, modifications can be made in the list of required courses to fit the needs of individual students. The schedule of studies below includes the additional lab credit required for graduation by the College of Arts and Sciences.

Admission to the Major requirements

Students may be admitted to the major upon making their intentions known to the department.

Graduation Requirements

A research experience is required of all students as a PHYSICS 499 489 project; however, to gain valuable work experience outside the university, students are strongly encouraged to participate in an internship or research experience in industry or a government lab outside of WSU. The summer after the junior year is the most appropriate time for this experience. All students are required to submit an undergraduate thesis to a committee of two physics faculty members in the senior year. PHYSICS 490 will give credit for this effort. The student must earn a C (2.0) or better grade in each of the required physics courses.

First Year

<i>First Term</i>	<i>Credits</i>
CHEM 105 [PSCI]	4
ENGLISH 101 [WRTG]	3
MATH 171 [QUAN]	4
MSE 110	2
PHYSICS 188	1

<i>Second Term</i>	<i>Credits</i>
CHEM 106	4
ENGR 120	2
HISTORY 105 [ROOT]	3
MATH 172	4
PHYSICS 189	1

Second Year

<i>First Term</i>	<i>Credits</i>
ECONS 101 [SSCI]	3
MATH 220	2
MATH 273	2
PHYSICS 201	3
PHYSICS 211	1
Foreign Language, if needed ¹	0-4
Option Elective ²	3
<i>Second Term</i>	<i>Credits</i>
Arts [ARTS]	3
ECONS 102 [SSCI]	3
MATH 315	3
PHYSICS 202	3
PHYSICS 212	1
Foreign Language, if needed ¹	0-4
Option Elective ²	3
Complete Writing Portfolio	
Third Year	
<i>First Term</i>	<i>Credits</i>
PHYSICS 303	3
PHYSICS 320	3
PHYSICS 341	3
STAT 360 or 370	3
Option Elective ²	3
<i>Second Term</i>	<i>Credits</i>
Biological Sciences [BSCI]	3
PHYSICS 304	3
PHYSICS 330	3
PHYSICS 342	3
<u>PHYSICS 489</u>	<u>1</u>
PHYSICS 499	1
Option Elective ²	3
Fourth Year	
<i>First Term</i>	<i>Credits</i>
COM 400 [COMM], ENGLISH 301 [WRTG], or ENGLISH 402 [WRTG]	3
Humanities [HUM]	3

	<p>PHYSICS 443 3</p> <p>PHYSICS 450 3</p> <p>PHYSICS 490 [M] 1</p> <p>Option Elective² 3</p> <p>Second Term Credits</p> <p>Diversity [DIVR] 3</p> <p>Integrative Capstone [CAPS] 3</p> <p>PHYSICS 415 [M] 3</p> <p>PHYSICS Electives³ 3</p> <p>Option Elective² 3</p> <hr/> <p>Footnotes</p> <p>¹ Two years of high school foreign language or at least two semesters of college-level foreign language are required by the College of Arts and Sciences for graduation.</p> <p>² Option Electives (18 credits): Choose from CE, CPT S, EE, ME, and MSE courses not used to fulfill other requirements.</p> <p>³ Physics Electives (3 credits): Choose any 300-400-level ASTRONOM or PHYSICS courses not used to fulfill other requirements.</p>	
<p>Physics & Astronomy Revise graduation requirements for Bachelor of Science in Physics - Astrophysics Option</p>	<p>Astrophysics Option (120 Credits)</p> <p>The program of courses below is appropriate for students who have had a good experience with calculus in high school and wish to start physics in the first semester at WSU (even though the student may be placed in MATH 171, if their high school grades for the year course were B or better they can follow this schedule of study). Students who have placed in MATH 172 can accelerate the math sequence. Students who have not had calculus in high school should defer PHYSICS 201/211 until they have completed MATH 171. Upon consultation with the departmental advisor, modifications can be made in the list of required courses to fit the needs of individual students. The schedule of studies below includes the additional lab credit required for graduation by the College of Arts and Sciences.</p> <p>Students may be admitted to the physics major upon making their intentions known to the department.</p> <p>Graduation Requirements</p> <p>A research experience is required of all students as a PHYSICS 499 489 project; however, to gain valuable work experience outside the university, students are strongly encouraged to participate in an internship or research experience in industry or a government lab outside of WSU. The summer after the junior year is the most appropriate time for this experience. All students are required to submit an undergraduate thesis to a committee of two physics faculty members in the senior year. PHYSICS 490 will give credit for this effort. The student must earn a C (2.0) or better grade in each of the required physics courses.</p>	<p>8-22</p>

First Year		
<i>First Term</i>		<i>Credits</i>
CHEM 105 [PSCI]		4
ENGLISH 101 [WRTG]		3
MATH 171 [QUAN]		4
PHYSICS 188		1
Social Sciences [SSCI]		3
<i>Second Term</i>		<i>Credits</i>
CHEM 106 or 116		4
HISTORY 105 [ROOT]		3
MATH 172		4
PHYSICS 189		1
PHYSICS 201		3
PHYSICS 211		1
Second Year		
<i>First Term</i>		<i>Credits</i>
Biological Sciences [BSCI]		3
MATH 220		2
MATH 273		2
PHYSICS 202		3
PHYSICS 212		1
PHYSICS 303		3
Foreign Language, if needed		0-4
<i>Second Term</i>		<i>Credits</i>
Arts [ARTS]		3
ASTRONOM 390		1
MATH 315		3
PHYSICS 304		3
PHYSICS 330		3
Foreign Language, if needed		0-4
Complete Writing Portfolio		
Third Year		
<i>First Term</i>		<i>Credits</i>
ASTRONOM 345		3
CPT S 121, E E 221, or MATH 300 [M]		2-4
Humanities [HUM]		3

	<p>MATH Elective¹ 3</p> <p>PHYSICS 320 3</p> <p>PHYSICS 341 3</p> <p>Second Term Credits</p> <p>ASTRONOM 435 or 436 3</p> <p>COM 400 [COMM], ENGLISH 301 [WRTG], or ENGLISH 402 [WRTG] 3</p> <p>MATH Elective¹ 3</p> <p>PHYSICS 342 3</p> <p>PHYSICS 410 4</p> <p><u>PHYSICS 489</u> 1</p> <p>PHYSICS 499 1</p> <p>Fourth Year</p> <p>First Term Credits</p> <p>Arts [ARTS], Humanities [HUM], or Social Sciences [SSCI] 3</p> <p>Diversity [DIVR] 3</p> <p>PHYSICS 450 3</p> <p>PHYSICS 490 [M] 1</p> <p>Technical Elective² 3</p> <p>Second Term Credits</p> <p>ASTRONOM 435 or 436 3</p> <p>Integrative Capstone [CAPS] 3</p> <p>PHYSICS 415 [M] 3</p> <p>Technical Elective² 6</p> <hr/> <p>Footnotes</p> <p>¹ MATH Electives (6 credits): Choose from 300-400-level MATH courses not used to fulfill other requirements.</p> <p>² Technical Electives (9 credits, at least 6 must be 300-400 level): Choose from ASTRONOM, CHEM, MATH, or PHYSICS courses not used to fulfill other requirements.</p>	
<p>Physics & Astronomy Revise graduation requirements for Bachelor of Science in Physics - Standard Option</p>	<p>Standard Option (120 Credits)</p> <p>The program of courses below is appropriate for students who have had a good experience with calculus in high school and wish to start physics in the first semester at WSU (even though the student may be placed in MATH 171, if their high school grades for the year course were B or better they can follow this schedule of study). Students who have placed in MATH 172 can accelerate the math sequence. Students who have not had calculus in high school should defer PHYSICS 201/211 until they have completed MATH 171. Upon consultation with the departmental advisor, modifications can be made in the list of required courses to fit the needs of individual students. The schedule of</p>	<p>8-22</p>

studies below includes the additional lab credit required for graduation by the College of Arts and Sciences.

Students may be admitted to the physics major upon making their intentions known to the department.

Graduation Requirements

A research experience is required of all students as a PHYSICS 499 489 project; however, to gain valuable work experience outside the university, students are strongly encouraged to participate in an internship or research experience in industry or a government lab outside of WSU. The summer after the junior year is the most appropriate time for this experience. All students are required to submit an undergraduate thesis to a committee of two physics faculty members in the senior year. PHYSICS 490 will give credit for this effort. The student must earn a C (2.0) or better grade in each of the required physics courses.

First Year

<i>First Term</i>	<i>Credits</i>
CHEM 105 [PSCI]	4
ENGLISH 101 [WRTG]	3
MATH 171 [QUAN]	4
PHYSICS 188	1
Social Sciences [SSCI]	3

<i>Second Term</i>	<i>Credits</i>
CHEM 106 or 116	4
HISTORY 105 [ROOT]	3
MATH 172	4
PHYSICS 189	1
PHYSICS 201	3
PHYSICS 211	1

Second Year

<i>First Term</i>	<i>Credits</i>
Biological Sciences [BSCI]	3
MATH 220	2
MATH 273	2
PHYSICS 202	3
PHYSICS 212	1
PHYSICS 303	3
Foreign Language, if needed ¹	0-4

<i>Second Term</i>	<i>Credits</i>
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Arts [ARTS]	3
MATH 315	3
PHYSICS 304	3
PHYSICS 330	3
Foreign Language, if needed ¹	0-4
Complete Writing Portfolio	
Third Year	
<i>First Term</i>	<i>Credits</i>
CPT S 121, E E 221, or MATH 300	2-4
Diversity [DIVR]	3
Humanities [HUM]	3
MATH Elective ²	3
PHYSICS 320	3
PHYSICS 341	3
<i>Second Term</i>	<i>Credits</i>
COM 400 [COMM], ENGLISH 301 [WRTG], or ENGLISH 402 [WRTG]	3
MATH Elective ²	3
PHYSICS 342	3
PHYSICS 410	4
<u>PHYSICS 489</u>	<u>1</u>
PHYSICS 499	1
Standard Option Elective ³	3
Fourth Year	
<i>First Term</i>	<i>Credits</i>
Arts [ARTS], Humanities [HUM], or Social Sciences [SSCI]	3
PHYSICS 450	3
PHYSICS 490 [M]	1
Standard Option Electives ³	6
Technical Elective ⁴	3
<i>Second Term</i>	<i>Credits</i>
Integrative Capstone [CAPS]	3
PHYSICS 415 [M]	3
Standard Option Electives ³	4 - 6
Technical Elective ⁴	3

	<p>Footnotes</p> <p>¹ Two years of high school foreign language or at least two semesters of college-level foreign language are required by the College of Arts and Sciences for graduation.</p> <p>² MATH Electives (6 credits): Choose from 300-400-level MATH courses not used to fulfill other requirements.</p> <p>³ Standard Option Electives (13 credits): Choose from 300-400-level ASTRONOM and PHYSICS courses not used to fulfill other requirements.</p> <p>⁴ Technical Electives (6 credits, at least 3 must be 300-400 level): Choose from ASTRONOM, CHEM, MATH, or PHYSICS courses not used to fulfill other requirements.</p>																																													
<p>Politics, Philosophy, and Public Affairs Revise graduation requirements for Bachelor of Arts in Political Science, Pre-Law Option</p>	<p>Political Science - Pre-Law Option (120 Credits)</p> <p>A student may be admitted to the Political Science - Pre-Law option upon making their intention known to the department.</p> <p>30 credits in POL S are required. 15 of the 30 credits of POL S course work must be earned at WSU.</p> <p>First Year</p> <table data-bbox="475 779 1385 1323"> <thead> <tr> <th><i>First Term</i></th> <th><i>Credits</i></th> </tr> </thead> <tbody> <tr> <td>Biological Sciences [BSCI] with lab¹</td> <td>4</td> </tr> <tr> <td>HISTORY 105 [ROOT]</td> <td>3</td> </tr> <tr> <td>Humanities [HUM]</td> <td>3</td> </tr> <tr> <td>POL S 101 [SSCI]</td> <td>3</td> </tr> <tr> <td>Quantitative Reasoning [QUAN]</td> <td>3</td> </tr> <tr> <td><i>Second Term</i></td> <td><i>Credits</i></td> </tr> <tr> <td>ECONS 101 [SSCI] or ECONS 102 [SSCI]</td> <td>3</td> </tr> <tr> <td>ENGLISH 101 [WRTG]</td> <td>3</td> </tr> <tr> <td>Physical Sciences [PSCI] with lab¹</td> <td>4</td> </tr> <tr> <td>POL S 102</td> <td>3</td> </tr> <tr> <td>Electives</td> <td>3</td> </tr> </tbody> </table> <p>Second Year</p> <table data-bbox="475 1423 1385 1917"> <thead> <tr> <th><i>First Term</i></th> <th><i>Credits</i></th> </tr> </thead> <tbody> <tr> <td>Arts [ARTS]</td> <td>3</td> </tr> <tr> <td>CRM J 101 (recommended) or Elective</td> <td>3</td> </tr> <tr> <td>PHIL 201</td> <td>3</td> </tr> <tr> <td>POL S 103</td> <td>3</td> </tr> <tr> <td>Electives</td> <td>3</td> </tr> <tr> <td><i>Second Term</i></td> <td><i>Credits</i></td> </tr> <tr> <td>ENGLISH 201 [WRTG], ENGLISH 301 [WRTG], or PHIL 200 [WRTG]</td> <td>3</td> </tr> <tr> <td>H D 205 [COMM] or COM 102 [COMM]</td> <td>3 or 4</td> </tr> <tr> <td>POL S 201</td> <td>3</td> </tr> </tbody> </table>	<i>First Term</i>	<i>Credits</i>	Biological Sciences [BSCI] with lab ¹	4	HISTORY 105 [ROOT]	3	Humanities [HUM]	3	POL S 101 [SSCI]	3	Quantitative Reasoning [QUAN]	3	<i>Second Term</i>	<i>Credits</i>	ECONS 101 [SSCI] or ECONS 102 [SSCI]	3	ENGLISH 101 [WRTG]	3	Physical Sciences [PSCI] with lab ¹	4	POL S 102	3	Electives	3	<i>First Term</i>	<i>Credits</i>	Arts [ARTS]	3	CRM J 101 (recommended) or Elective	3	PHIL 201	3	POL S 103	3	Electives	3	<i>Second Term</i>	<i>Credits</i>	ENGLISH 201 [WRTG], ENGLISH 301 [WRTG], or PHIL 200 [WRTG]	3	H D 205 [COMM] or COM 102 [COMM]	3 or 4	POL S 201	3	<p>8-22</p>
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POL S 300	3
Electives	3
Complete Writing Portfolio	
Third Year	
<i>First Term</i>	<i>Credits</i>
300-400-level POL S Elective ²	3
<u>Ethics and Law Course³</u>	<u>3</u>
CRM J 320 or 420	3
POL S 402	3
Foreign Language, if necessary, and/or Electives	5
<i>Second Term</i>	<i>Credits</i>
300-400-level POL S Elective ²	3
POL S 404 [M]	3
Foreign Language, if necessary, and/or Electives	9
Fourth Year	
<i>First Term</i>	<i>Credits</i>
300-400-level POL S Elective ²	3
Diversity [DIVR]	3
300-400-level Electives	9
<i>Second Term</i>	<i>Credits</i>
Integrative Capstone [CAPS]	3
PHIL 470	3
300-400-level Electives	8
Footnotes	
¹ To meet University and College of Arts and Sciences requirements, students must take a [BSCI] course with lab and [PSCI] course with lab.	
² POL S Electives need to include an additional [M] course to fulfill University requirements.	
³ <u>Ethics and Law Course: Choose from B LAW 210, COM 415, CES 440, CRM J 320, 380, or 420, ENGLISH 112, or 364, HISTORY 410, and PHIL 360, 365, 370, 450, or 460.</u>	